

“ACTIVATE” HISTORICAL CITY’S MODERN “BACKBONE” EXPLORING XI’AN’S CONTEMPORARY AXISYMMETRIC DEVELOPMENT

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ABSTRACT

As one of the world’s renowned ancient city, Xi’an’s axisymmetric spacial pattern has been inherited and reserved till now. Today, the accumulated city space along Xi’an’s axile wire is, not only the most important historical site, but also the most dynamic area in ancient city. Like all the other remained but dynamic ancient cities, there still has the biggest challenge facing Xi’an’s axisymmetric spacial environment: how to keep balance and get win-win between preserving the traditional city pattern and establishing a city’s modern vitality.

By researching Xi’an’s axile wire and its important nodal spaces, this thesis mainly analyzes their features and characteristics and explores how they solve the contradictions between tradition and modern in the development of the space along Xi’an’s axile wire; how they activate modern city’s energy and satisfy contemporary people’s developing demands, changing a historical heritage city into a creative modern cultural city as well as a cosmopolis. In the end, this essay tries to explore the limitations in Xi’an’s axisymmetric development in order to give enlightenment how to develop Xi’an in the future.

Key words: Xi’an central axis; node; tradition; modern; development

1. SUMMARY OF URBAN CENTRAL AXIS

1.1 Basic concepts of city axis

In ancient China, "axis" referred to the axis of rotation, then there was the meaning of the "center", but there was not the word "axis". And the western word "axis" contained the meaning of moving along the axis. Gradually, the meanings of Chinese "axis" and western "axis" became similar, both referring to a kind of subjective feeling line in the middle of the city which dominates and controls urban spatial pattern when we are planning a city, or referring to a city's main route, it represents a kind of order. But there are subtle differences between Chinese and western axis. Western one refers to architecture mostly or urban spatial organization method, and Chinese one tends to a certain culture.

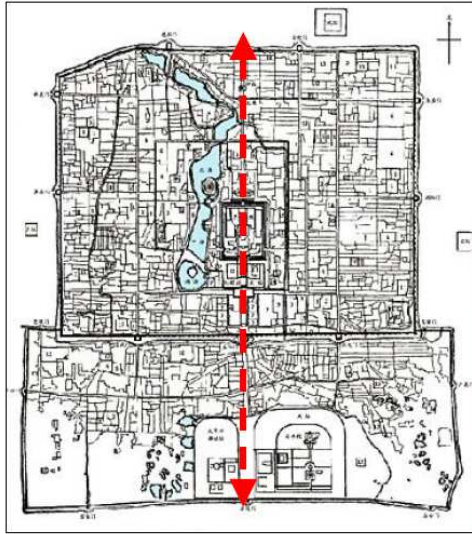
1.2 Basic meaning of urban central axis

The city's "central axis" is the most prominent one in urban axes, leading and dominating the space form of the city, which is the main development direction, it is the linear element to control the whole city pattern, which plays an important role in urban planning. Urban central axis has broad sense and narrow sense. The centerline of the narrow sense is a virtual or real line in urban space organization, which is the skeleton of the city; While the centerline of the generalized contains a broader sense, it is not only a spatial line, but also the direction of the city's spirit, culture and development. In ancient China, it has a certain political significance, which is the ancient symbol of imperial power. While in the contemporary, it means urban context, which is formed under specific geography and ideology for a long time and is unique.

1.3 The basic types of urban central axis

Urban central axis in existence form can be divided into "real axis" and "imaginary axis". Real axis is subsistent one in the central place of the city, which can represent the relationship among buildings and in city space and can also show the strong urban skin texture and urban order, such as the central axis of Beijing, which buildings are put on. And "imaginary axis" is standing on the view of art, is a kind of design method to process architecture and urban planning, which exists in architects and planners' hearts tangibly or invisibly, it is a kind of spatial axis which is vacant and is covered by no buildings. Many western urban planning uses the "imaginary axis", such as traditional Paris city axis.

The forms of urban central axis is varied, which can be a sequence of construction and the main city road and also can be mountains, rivers or green land, it can be not only straight, dynamic, artificial, but also winding, static, natural.



The plan of Beijing city in Qing Dynasty

(<http://www.artx.cn/artx/keji/39747.html>)



The Paris axis

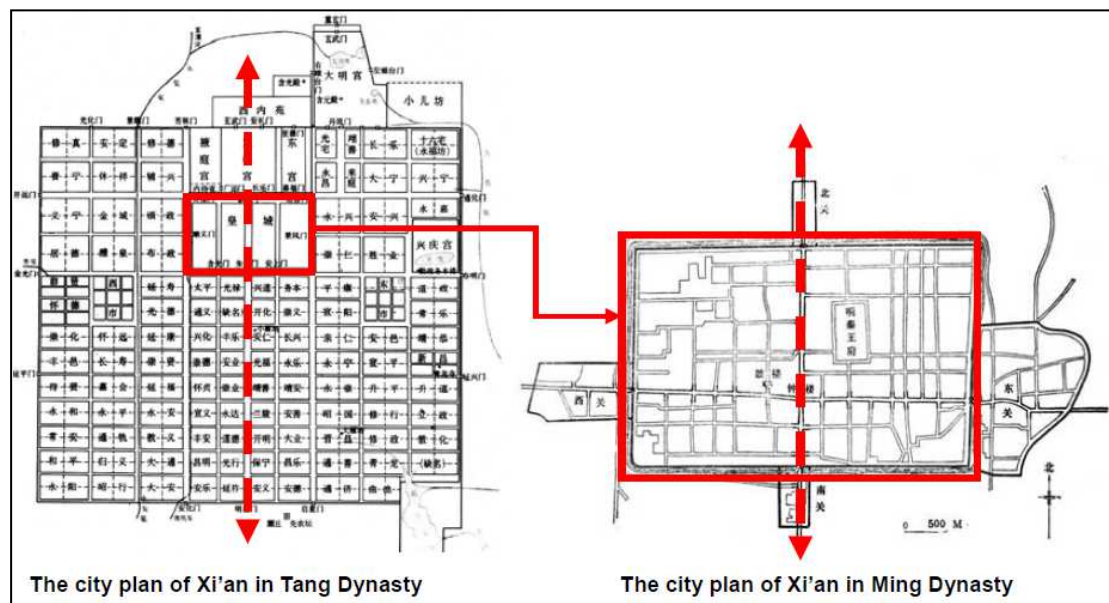
(Captured in Google Earth)

2. THE DEVELOPMENT OF XI'AN CENTRAL AXIS

2.1 The development of Xi'an central axis in ancient time

Xi'an is a city with a long history, used to be thirteen dynasties' capitals in ancient China. In ancient times, the city in Tang dynasty is the largest one and the most structured. System of urban planning is to divide the city into 109 squares by structured straight roads which make a good order. The city's axisymmetric structure in Tang dynasty is very clear, the royal architectures are placed on the central axis or on both sides of the axis, which is a common used urban planning method in ancient China to represent the imperial power, the north-south central axis runs through the whole city and leads the city's development.

The city's scale in Ming and Qing dynasty became smaller, which is nearly equal to the scale of imperial area in the city of Tang dynasty, but the city still adheres to the axisymmetric spatial pattern of Tang dynasty, the central axis still occupies the important position and it is also the city's main road. The bell tower and the drum tower in center of Xi'an are relics in the Ming dynasty.



The city plan of Xi'an in two dynasties and the relationship between them

(Drawn by the author)

2.2 The contemporary development of Xi'an central axis

Before 1945, Xi'an was developing rapidly, after that, the city began to develop steadily which successfully was transformed from a military fortress city into a modern industrial and commercial city. Xi'an's urban development adheres to the principle of central axis which is regarded as urban development axis. The functions of the central axis are gradually changing, adapting to the progress of modern society and meeting the needs of modern life.

Xi'an central axis is transformed from a centerline only with the political function into a commercial, cultural and recreational city central axis, and public service facilities are constructed to satisfy the life of ordinary people; Xi'an central axis is changed gradually from the ancient royal road into a central road of the city for ordinary people to walk and it is a artery throughout the whole city from south to north; Xi'an central axis is also altered from the original city skeleton into a central road which shows the city image and cultural feature, so it is the carrier of Xi'an cultural context. Xi'an city's central axis will be developing with the development of the social political and economic development, constantly changing and stepping the pace of urban modernization to be an international metropolis gradually.



The city plan of Xi'an in recent time

(Captured in Google Maps)

3. THE CURRENT SITUATION OF XI'AN CENTRAL AXIS

3.1 The relationship between central axis and the traffic

In all ages, Xi'an central axis plays an important role. In ancient times, it was the royal road, while in modern times, it is a main road throughout the city from north to south in center of the city, it not only connects the central street from east to west with a cross, but also connects other east-west streets, becoming an obvious trunk road. Therefore, the central axis is shouldering the important burden of city's north-south traffic, becoming the city traffic artery. At this time, it should deal with a lot of traffic problems to prevent traffic congestion.

Xi'an central axis is to focus on the development of the traffic, preventing traffic paralysis which may affect urban axis' image. The central axis is 50m-60m wide and the closer it gets to the city centre, the wider the road is. The road has two-way lane, slow lane, bus lanes and green barrier, the sidewalks on both sides are 11m-17 m wide which can meet the demand of people and at the same time green travel is advocated. In recent years, the subway is also in rapid development which must be considered as the main axis, so line 2 through the whole axis alleviates the traffic pressure of central axis.

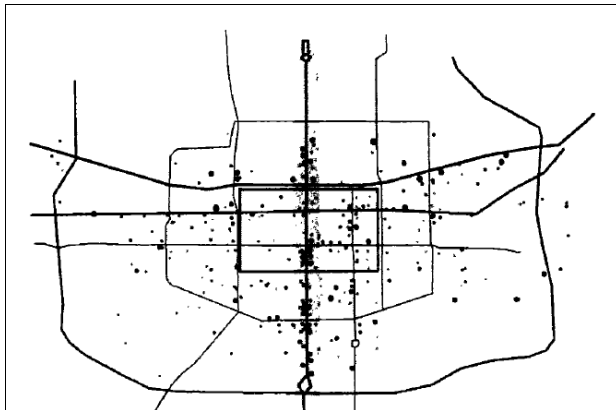


View of the central axis of Xi'an to the Bell Tower

(http://sn.xinhuanet.com/2009-09/28/content_17828587.htm)

3.2 The land usages on both sides of central axis

With the modern construction, Xi'an city is expanding and the north-south axis is getting longer and longer. Urban functional requirements also gradually become more comprehensive, so the land usages on either side of the axis also become more diversified from a single function, in order to adapt to the diversity of modern life. Since the reform and opening-up policy, the land usages on both sides are changed from simple government and medical land gradually into commercial finance, administrative office, cultural entertainment, living and education land, etc. And commercial land runs through the whole central axis, forming large commercial atmosphere to stimulate the economic development of the city.



The distribution of main public facilities in Xi'an

(A primary study of the symmetry axis in Xi'an city--The Study of the deep-seated structure of urban form in Xi'an city, page 79)

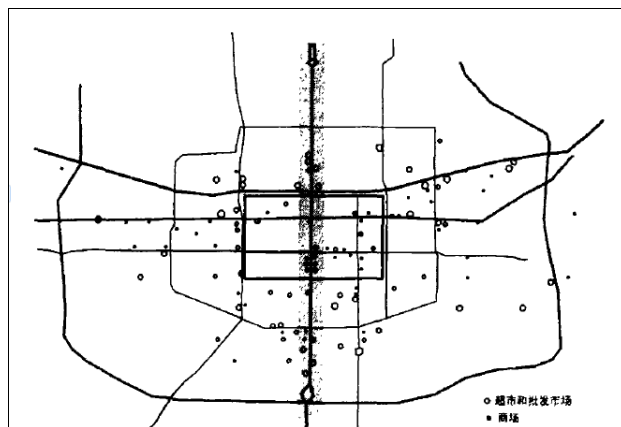
3.3 The general situation of architectures on both sides of central axis

3.3.1 Architectural function and distribution

From land usages, the functions of the buildings are also varied and comprehensive, the buildings have business, theater, office, library, gym, bank, hospital and residential functions

and more and more commercial complexes can meet the diverse needs of the contemporary development in Xi'an. Xi'an commercial buildings are throughout the central axis. Commercial and recreational buildings are mostly around the node on the axis, especially the big commercial complexes. Node spaces often shape the image of the city and offer places to get people together. So the distribution of commercial buildings precisely satisfies the economic needs of society.

In ancient times, important buildings are placed on or around the nodes of city's central axis, so the development of Xi'an also follows the old tradition, such as Shaanxi stadium, library and relocated government in recent years which are all located near city central axis, which embodies the Chinese traditional culture and context. Xi'an is constantly expanding, modern tall buildings had stood up at the north and south end of the axis. City Sports Park in north suburb of the city and the International Convention and Exhibition Center in south suburb promote the rapid development of Xi'an's suburbs, commercial buildings and large settlements pour into the suburbs to realize modernization.



The distribution of main commerce in Xi'an

(A primary study of the symmetry axis in Xi'an city--The Study of the deep-seated structure of urban form in Xi'an city, page 78)

3.3.2 Architectural form

Architectural forms in Xi'an contain traditional one, mostly in order to inherit and reflect the traditional culture which is similar to the form in Tang dynasty, but on both sides of axis near the center of the city there are modern buildings which mostly have the archaistic style, and to the north and south end of the axis are modern architectures with modern style, but some of them are also archaistic style, in order to strengthen the cultural connotation of the central axis to have a good city image. In addition, there are some modern bank buildings in North Street with an European style, which are important part of Xi'an architectural culture.

Xi'an city's master plan mentions that "we should construct modern city on the basis of keeping ancient style". Contemporary architectural creation is formed in old area of the city, in the suburbs of the city is given new image and the buildings should be in harmony with the

environment surrounding cultural relics. In order to meet the needs of modernization construction in Xi'an and not abandon traditional culture, finding the perfect balance between them, the pseudo-classic style is needed, which can make the city get not only the traditional spirit but also the time spirit to reflect regional culture and meet the demand of modern society.



The different architectural forms on central axis in Xi'an

(Taken by the author)

3.3.3 Building's height and color control

In Xi'an, the historical "Bell Tower" and the wall are located in the center of the city and control it, occupying the important position of the city. In order to highlight Xi'an's historical atmosphere, ancient buildings should be used and protected sufficiently, letting context continue. The city wall, bell tower, drum tower and other major ancient architectures and traditional residential area are mainly protected, so the height must be controlled according to the scope of protection and actual situation. From the city wall to the downtown, the heights are 9m, 12m, 15m, 18m, 20 m, 24 m, 28m and 36m. The overall height is set up according to the height of the bell tower's top (36m) to highlight the bell tower's status instead of burying it in the modern city. In the scope of the high-level feasible region, a small amount of high-rise buildings can be arranged.

To ensure the modern and traditional things coexist and the coordinated development, building's color also cannot be ignored. Architectural color is not only the external reflection of city's characteristics and city's appearance, but also affects the development of urban economy and culture. To be coordinated with the overall environment of Xi'an, at the same time highlight the distinctive geographical features, Xi'an's architectural colors are mainly gray, khaki and ochre.



Different heights of the buildings like steps

(Taken by the author)

3.4 The general situation of axle nodes

Node is a place where people gather and living, many public events are happening here, reflecting the demands of the citizens. There are more than ten nodes on the central axis, which are formed by historical architectures, road intersections or a square. They play their respective roles and show Xi'an's ancient and modern style.

3.4.1 The bell tower node

Bell tower area is located in the center of Xi'an, which is business center, cultural center and tourist center, it is one of the most important nodes. Because the bell tower promotes tourism, business and economic development of Xi'an, there are the most people gathering here. The public facilities and the square of bell tower and drum tower are around the bell tower node to satisfy the needs of tourists and shoppers and the demands of people's daily activities. While some archaistic commercial buildings are harmonious and unified with surrounding environment. The grass and flowers around the bell tower make the silence history vibrant. When we are standing in the center to look the four streets, they are unimpeded, forming the lines of sight, which can enhance the feeling of center.



View of the Bell Tower node

(<http://www.uu316.net/news/show.asp?id=2181>)

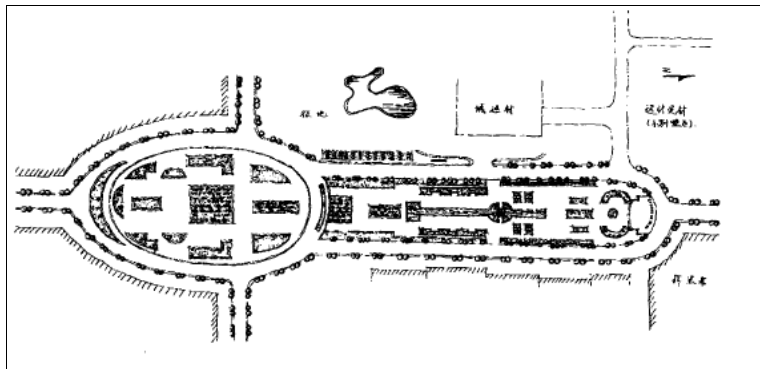


View of the square of bell tower and drum tower

(http://www.itravelqq.com/2011/0124/105905_4.html)

3.4.2 Zhang Jia Bu square

Zhang Jia Bu square is located in the north of central axis, which is the entrance to Xi 'an from the north and represents the city's image. The square is located on the central axis, surrounded by the streets. There was large area of grass in the square and lacked the corresponding service facilities before, so the utilization rate of the square was very low, and there was no tall buildings around it, lacking the feeling of surrounded, which led that people don't want to stay too much in it. With the development of urbanization in recent years, Xi 'an strives to build an image of portal, strengthen the public service facilities and set up large-scale sculptures to show the new image of Xi 'an. In the northwest corner of the square is the City Sports Park and in the northeast is the Xi'an Planning Exhibition Hall. These facilities attract more people to get here for leisure and entertainment, enhancing the vitality of northern suburb of the city.



The plan of Zhang Jia Bu square

(A primary study of the symmetry axis in Xi'an city--The Study of the deep-seated structure of urban form in Xi'an city, page 88)

3.4.3 The Xiaozhai cross

Xiaozhai is located on Xi'an city's artery-Chang An Road, connecting Daxingshan Temple and Xi'an History Museum, the formation of Xiaozhai business circle has strong spontaneity, Xiaozhai becomes one of the most dynamic regions gradually by integrating business, travel, culture characteristic on the basis of servicing in the surrounding. Xiaozhai area has unique educational resources such as schools, museums and tourist attractions and so on, and convenient transportation network promotes the commercial prosperity and vitality. Circular pedestrian overpass contacts the Parkson, Xiaozhai Square, Military Service and other commercial nodes with immeasurable business competitiveness. The landscape along the central axis forms a good human environment and ecological environment in the south of the city.



View of Xiaozhai's circular pedestrian overpass

(<http://trip.iecity.com/Photo/317/detail2531.html>)

3.4.4 Television Tower

TV tower is located in the southern part of central axis, served as a link between Chang An district and Yan Ta district with commercial, scientific, educational and other functions. By improving surrounding enterprises and industrial development, it forms the most unique Xi 'an CBD. The injection of exhibitions, household and southern universities brings new energy for the area. Tower area is located in Qujiang area and Gaoxin technology industry area, adjacent to Chang 'an district, is the integrating point of the new city and the old city, by integrating the surrounding building height, traffic connection between old and new buildings, it gradually formed a district with four centers and the trend of multi-dimensional development. The surrounding buildings' forms are diversiform with strong sense of time and make a breakthrough in the traditional architectural form to deepen the regional city's impression, at the same time, the contradiction among buildings on the ground is reduced by developing the underground space, and efficient transportation system makes the area become a unique deputy city center with commerce.

3.5 Central axle landscape

Xi 'an central axis is the development axis, image axis, traffic axis and landscape axis. Modernization construction of urban landscape should be considered at the same time to make the modern city ecological sustainable. Axile landscape includes not only the green landscape, but also roads and buildings on both sides of the axis. On both sides of the axis, there are isolation strip and trees, the Bell Tower and the north and south gates of the wall are decorated with colorful flowers to add vitality to the city. In the same way, Huan Cheng Park and the protection and governance of the moat are the embodiment of the ecological and sustainable. The modern pedestrian bridge provides a convenient transportation for the city and forms the modern landscape elements. The buildings on either side of the axis are in harmony with the environment of the historic city and are the important landscapes on the central axis no matter in what forms, materials and colors. They bring to Xi 'an traditional and modern landscape of contemporary architecture. The protection and utilization of historical

buildings is also an important part for urban landscape to inherit and continue the historical context.



View of landscape on the central axis in Xi'an

(<http://www.cnblogs.com/sapphire/gallery/image/6695.html>)

4. THE PLACE SPIRIT AND TIME SPIRIT OF CENTRAL AXIS

Xi 'an central axis is the main place for citizens' public activities and a space people can feel the Xi 'an's historical culture in it with a strong place spirit. Central axis has historical sites and traditional buildings, people's daily and holidays' activities also occur on the central axis to embody the Xi 'an unique characteristics and tradition. But if people only see the past instead of things now and in the future, the city will not progress and develop, people can't live with old antiques, therefore, Xi 'an needs development to meet the demands of people's modern life and the standard of international metropolis, which reflects the spirit of the city. As a famous historical city, Xi 'an needs to balance the development of history and the modern to make it traditional and modern, namely, the construction of urbanization should be strengthened and the traditional culture will not be abandoned to let the space and time spirit sustainable and seek a kind of eternal development.

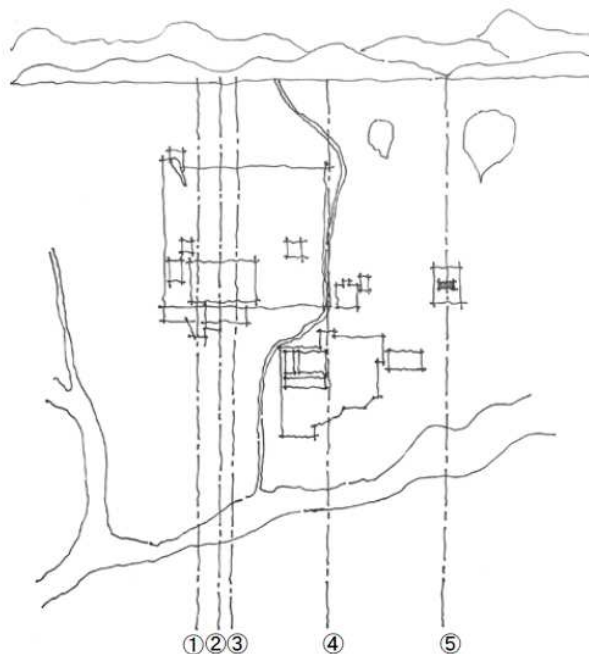
5. RETHINK TO THE DEVELOPMENT OF XI'AN CENTRAL AXIS

As we all know, internationalization leads to the similarity of different cultures, so the traditional cultures in China are in danger of disappearing. So Xi 'an's city construction is naturally facing national and international, traditional and modern, successive and updated, protection and development contradictions, so to solve and balance them is very important. Xi 'an city planning also make the corresponding contribution at these levels and the development and construction of Xi 'an central axis can reflect that very well.

Central axis as the lifeblood of Xi'an, is related with the fate of the city construction and the future. In January 1993, the Shaanxi provincial institute of archaeology found the axis of several groups of large buildings in Western Han dynasty on the north-south axis of the city in Han dynasty. Survey results confirmed that in Western Han dynasty there was a long north-to-south architectural baseline with a total length of 47 km. Thus, the north-south central

axis of Xi'an has a strong historical significance, we should heritage and develop it. However, city is expanding, people begin to focus on if Xi 'an central axis will hinder the development of the whole city to make the urban structure unreasonable and unbalance spatial development, single center and single axis may not fit the expansion of modern cities, we need to explore the new order. In different historical periods, the centerline of Xi 'an will change to adapt to the development and civic life's demands at that time when the humanities, geography and nature changed, and now we should think about the city that if it should have several centers and axes to promote the development of urban edge regions and form suitable spatial order for modern people and modern cities. We should inherit and continue the historical texture, rather than the protection and renovation.

Only adapting to the development of the times and not abandoning historical relic (whether physical or mental), a city can be sustainable developed to become an international metropolis.



- ☐ The central axis of Tang Dynasty
- ☐ The central axis of Ming Dynasty
- ☐ The central axis of Sui Dynasty
- ☐ The central axis of Han Dynasty
- ☐ The central axis of Qin Dynasty

Different axes of Xi'an in different dynasties

(Drawn by the author)

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